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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,224	02/18/2004	Masuhiko Natsuhara	39.033	2223
29453	7590	04/05/2005	EXAMINER	
JUDGE PATENT FIRM RIVIERE SHUKUGAWA 3RD FL. 3-1 WAKAMATSU-CHO NISHINOMIYA-SHI, HYOGO, 662-0035 JAPAN			PAIK, SANG YEOP	
			ART UNIT	PAPER NUMBER
			3742	
DATE MAILED: 04/05/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/708,224

Applicant(s)

NATSUHARA ET AL.

Examiner

Sang Y Paik

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aruga et al (US 5,688,331) or Ohashi et al (US 6,160,244).

Aruga or Ohashi shows a semiconductor manufacturing device including a ceramic substrate with a resistive heating element, and a substrate-supporting shaft joined to the substrate. However, neither Aruga nor Ohashi explicitly shows the claimed distance where the distance between the central axis of the shaft and the center of the substrate is 5% or less wherein the shaft has a substance whose difference in thermal expansion coefficient with the substrate is 5×10^{-6} K such that temperature distribution is within ± 10 %.

In Aruga et al and Ohashi et al, it is shown from the figure drawings that the supporting shafts are provided at the center of the substrate, having the central axis of the shaft aligned with the central axis of the substrate. Furthermore, Aruga shows that the substrate is made of aluminum nitride and the shaft made of alumina or any other ceramic materials. Ohashi shows the substrate and shaft that are made of the aluminum nitride material which is the same material as disclosed in the applicant's specification.

While the claimed distance and thermal expansion coefficient is not explicitly shown, it would have been obvious to have the supporting shaft at the center of the substrate and further

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have the central axis of the shaft come within the claimed distance or less so that the support shaft can uniformly support and balance the substrate on its supporting shaft since having the misaligned central axis would tilt the substrate one way or the other as the weight of the substrate is imbalanced on the supporting shaft; and the applied prior art which teaches the same structure as that of the claimed structure and using the same material as that of the applicant's would inherently meet the claimed thermal expansion coefficient along with the claimed temperature distribution.

Response to Arguments

3. Applicant's arguments filed 1/25/05 have been fully considered but they are not persuasive. The applicant argues that the applied art does not teach the claimed thermal coefficient and further argues that the examiner's assertion of the obviousness to align the central axis of the substrate and the shaft would not lead to the claimed invention. As indicated by the examiner, the applied art does not explicitly teach that relationship of the shaft and the substrate axis, but it is pointed out that the reasonable inferences are drawn from the drawing figures where the central axis of the shaft and substrate is aligned. Furthermore, it would have been obvious to one of ordinary skill in the art to have the axis of the shaft and substrate be aligned so that the substrate which is supported by the shaft would not tilt one way or the other by keeping the substrate in balance.

Also, it is noted that the prior art shows the shaft and ceramic substrate that are made of the same base material such as aluminum, and Ohashi further shows that the shaft and substrate are made of the same material as is done in the applicant invention. When elements are made of the same material, they would inherently possess the same thermal expansion coefficient.

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Furthermore, the claims are silent about what substances or materials are used to make the shaft and substrate, and since the claimed structure is basically met by the applied art, the claimed thermal coefficient expansion which is the resulted function of such structure would be inherently met by the prior art that teaches the same claimed structure and the same material used by the applicant as disclosed in the applicant's specification.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Y Paik whose telephone number is 571-272-4783. The examiner can normally be reached on M-F (9:00-4:00) First Friday Off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sang Y Paik
Primary Examiner
Art Unit 3742

syp